

Digital Contents

สมชาย ประสิทธิ์จตุระกุล

มาสร้าง+เก็บแบบดิจิทัลกันเถอะ

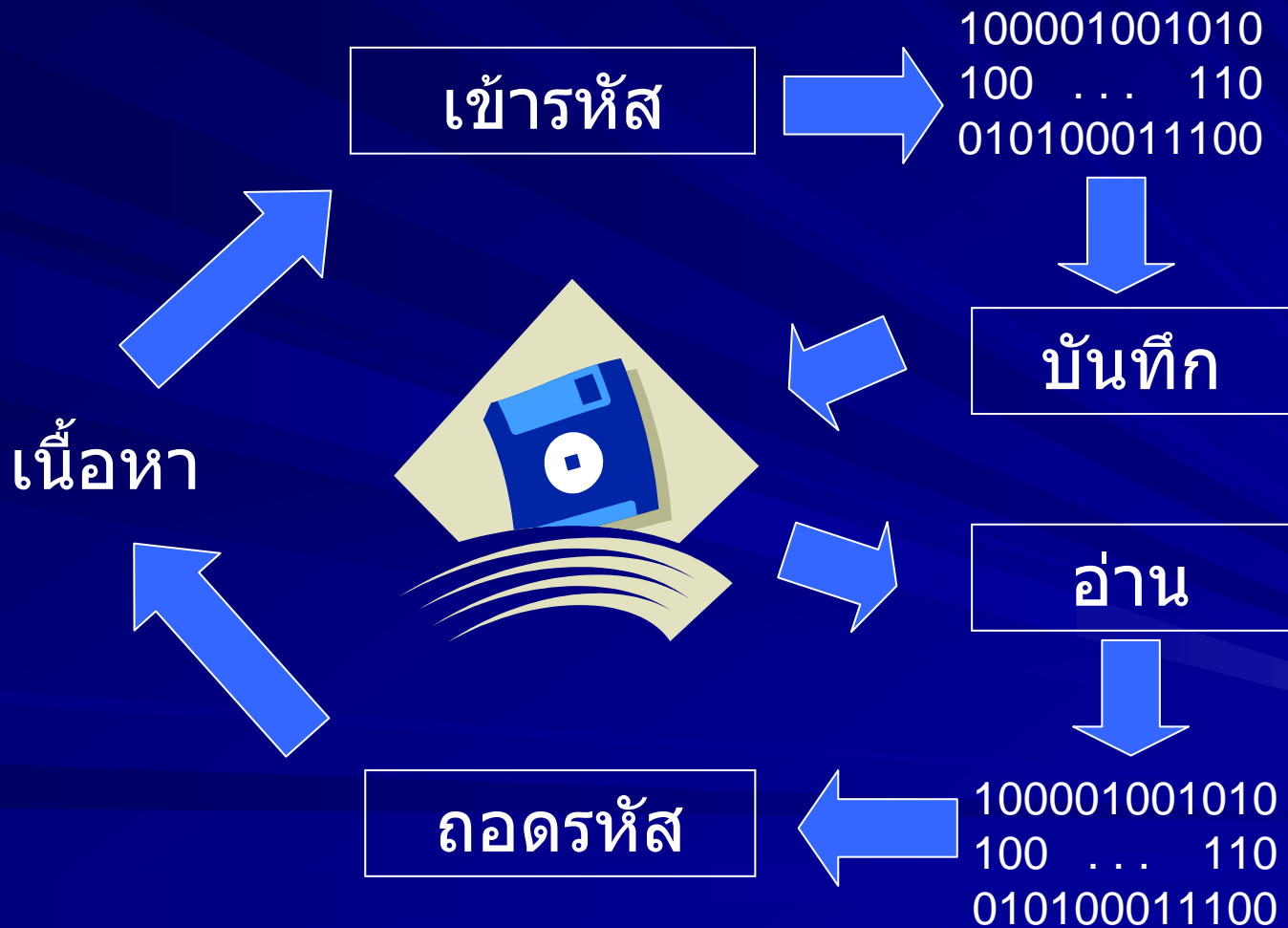
■ เอกสารดิจิทัล

- ไม่เสื่อม
- ทำสำเนาง่าย
- ค้นหาสะดวก รวดเร็ว
- จัดส่งผ่านเครือข่ายได้
- ขนาดเล็ก ต้นทุนต่ำ
- ประหยัดกระดาษ
- รักษาสิ่งแวดล้อม
- ...

101010000100101010
101000001010100011
111100001010010000
000010100011100000
100001111110100100
000101000101010010
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100001111110100100
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Born-digital

การสร้าง เก็บ และใช้



เลือกแบบไหนดี ?

■ File formats

- txt (UTF-8, Unicode, ASCII, ...)
- doc, pdf, xml, xdoc, jpeg, TIFF, wk1, ...

■ Medias

- diskette, hard-disk, tape, CD, DVD-ROM, ...

■ Platforms

- Intel-based, MS Windows, Mac-OS X, Solaris, Linux, Java, ...

เลือกยาก

■ File formats

- ล้าสมัย ปกปิด (dbase, VisiCalc, WordPerfect, ...)
- เปลี่ยนรุ่นบ่อย (Word 6, 97, 2000, XP, 2003, ...)
- ใช้กับเฉพาะบาง platforms ที่อาจไม่มีแล้ว

■ Medias

- เปลี่ยนรูปแบบบ่อย (8, 5-1/4 3-1/2, ZIP, CD, ...)
- มีอายุใช้งานไม่นาน
- เสื่อมแล้วไม่รู้

■ Platforms

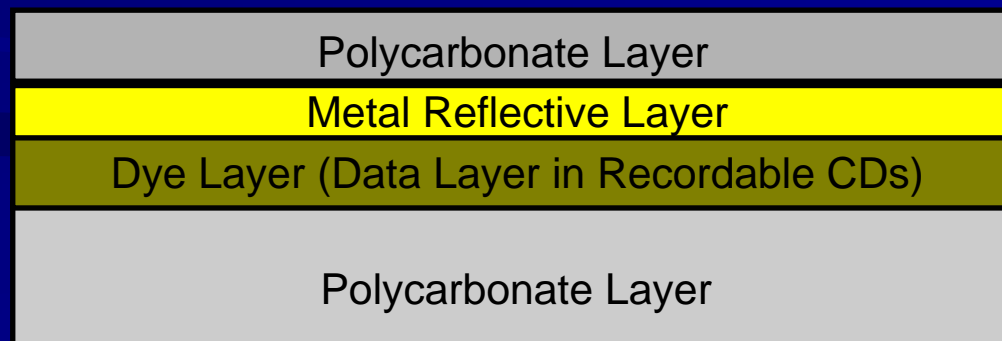
- เปิดแฟ้มเก่า ต้องใช้ platform เก่าซึ่งไม่มี

Magnetic Disks

- Common MTBF ranges are from 500,000 to 1,200,000 hours (57 to 137 years), meaning half the drives in the population will fail before that time, half after.
- Seagate and Maxtor offer 5 year warranties on their SCSI HDs
- High probability of mechanical damage

Optical Disks

- CDs and DVDs are multilayered products, consisting of polycarbonate outer coatings (plastic), metal reflective layers, and dye layers
- Life-spans range from 3 - (predicted) 300 years, depending on components



CD-R or
CD-R/W

CD Metal Reflective Layers

Metals	Properties and Problems
Aluminum	Least reflective, subject to tarnishing.
Silver	Most reflective, relatively safe from tarnishing. LE 100.
Gold	Slightly (5%) less reflective than silver, but very unlikely to decay. LE 300.

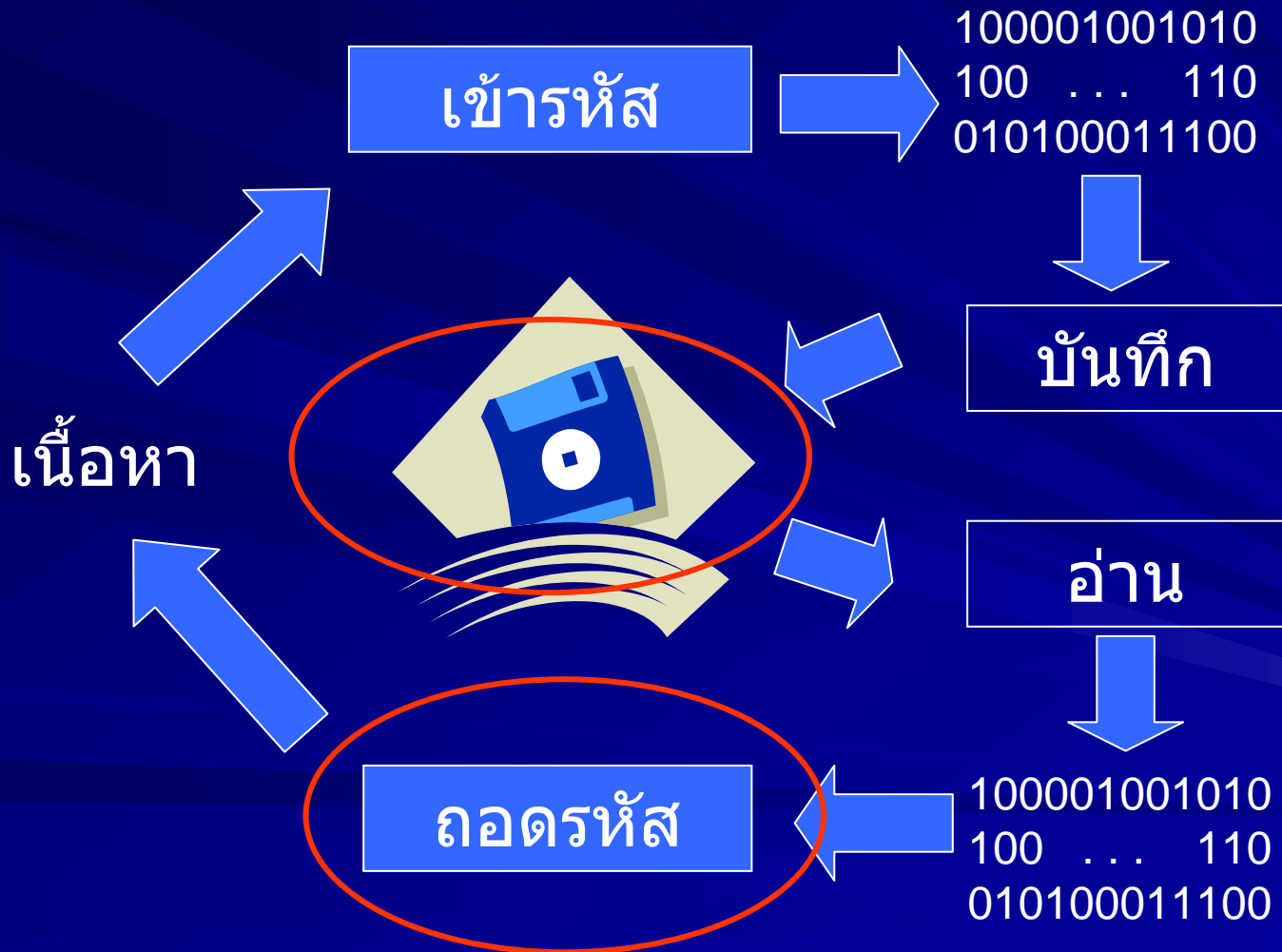
Common CD Dyes

Dye	Color	Properties and Problems
Azo	Very deep blue	Very photosensitive. Failure after 20 – 100 hours of full spectrum light exposure.
Cyanine	Blue	Photosensitive. Failure after 100 – 200 hours of full spectrum exposure.
Pthalocyanine	Very light green	Fairly stable. Failure after 500 – 600 hours of exposure.

Digital Preservation

- Preservation traditionally focused on the physical object.
- Preserving a digital object requires maintaining the ability to reproduce the content from stored data.
- Over time, reproducing a digital object is challenging because the format for representing the content change along with hardware and software.

สิ่งที่ต้องเก็บรักษา



Digital Preservation

- Bit preservation
 - Transfer and refresh of data
- Migration
 - Transformation of data into new formats to allow for continued access
- Emulation
 - Recreation of original operating environment for continued access
- Conservation
 - Maintaining original equipment for access

Digital Strategy for the LOC

Recommendation:

The Library should explicitly define the sets of digital resources for which it will assume long-term curatorial responsibility.

Building E-Record Archive at NARA

- Be neutral with respect to migration, emulation, or other approaches.
- Save records in “preferred derived forms” in addition to the original bits.
- Save essential metadata.
- Archive as much information as possible about the software and work flow processes used to ingest the original records.
- Safeguard the bits
- Select the appropriate storage media.

LOCKSS

- Lot Of Copies Keep Stuff Safe
- Developed by Stanford Univ. Library
- Allows libraries to run web caches for specific journals
- Run on generic PC using open-source sw
- Being tested at 40+ libraries worldwide with the support of 30+ publishers.